

**Laboratory Quality Control, Statistics, and Measurement Uncertainty Pre-
Assessment Answer Key**

1. Which of the following best defines a quality assurance plan?
 - a. The best procedures and processes that deliver quality products for a laboratory.
 - b. The overall strategy and goals that make a successful laboratory.
 - c. The plan, direction, and programs that produce the desired laboratory quality.
 - d. The data quality objectives that produce the results for a laboratory customer.

Answer: C

2. T or F – Laboratory Quality Control is another title for Laboratory Quality Assurance.
 - a. T
 - b. F

Answer: B

3. T or F - Laboratory quality is affected by laboratory safety.
 - a. T
 - b. F

Answer: A

4. Typically, a quality control sample is analyzed _____.
 - a. by itself to avoid interferences
 - b. with a batch of samples
 - c. in duplicate to ensure accurate results
 - d. only when a customer requests it

Answer: B

5. A data mean is also called the _____.
 - a. accuracy measurement
 - b. center point
 - c. average
 - d. best guess

Answer: C

6. An analysis blank measures _____.
 - a. calibration points
 - b. instrument quality
 - c. human performance quality
 - d. cross-contamination

Answer: D

**Laboratory Quality Control, Statistics, and Measurement Uncertainty Pre-
Assessment Answer Key**

7. T or F - QC charts are used to visually represent the quality checks.
- a. T
 - b. F

Answer: A

8. Quality Control samples are _____.
- a. analyzed separately
 - b. included with every batch of samples
 - c. analyzed with greater care
 - d. reviewed and approved by an external team

Answer: B

9. The standard deviation of a data set determines its _____.
- a. average
 - b. reproducibility
 - c. precision
 - d. accuracy

Answer: C

10. Which of the following can cause inconsistent results?
- a. human error
 - b. instrument malfunctions
 - c. procedure issues
 - d. all the above

Answer: D

11. Which of the following error types is expected?
- a. trend
 - b. systemic
 - c. shift
 - d. random

Answer: D

12. Trends are usually _____.
- a. subtle
 - b. downward
 - c. abrupt
 - d. upward

Answer: A

13. Trends in data move typically move _____ the centerline.

- a. away from
- b. toward
- c. parallel to
- d. a or b

Answer: D

14. A shift in data usually occurs _____.

- a. over time
- b. regularly
- c. after procedure changes
- d. abruptly

Answer: D

15. Training for laboratory technicians should include:

- a. Classroom and on-the-job training
- b. Classroom and practice time
- c. Required reading and practice time
- d. On-the-job training only

Answer: A

16. T or F – Measurement uncertainty is best calculated using all errors possible.

- a. T
- b. F

Answer: A